REMARKS

In accordance with the foregoing, claims 1-3 and 5 have been amended and new claim 9 has been added. Claims 1-3, 5 and 9 are pending and under consideration.

The rejection under 35 U.S.C. § 112 is overcome by the present amendments.

The rejections under 35 U.S.C. § 103 are now discussed.

Using independent claim 1 as an example, this claim recites the second EGR passage is branched out on an upstream side of the first diesel particulate filter and a second diesel particulate filter is arranged in said second EGR passage. Thus, the exhaust gas passing through the second EGR passage is a PM-purged exhaust gas.

In contrast, Minami teaches a passage 24 branched at a point downstream of the turbine 81 and downstream of DPF 13 and at a point upstream of the compressor 82. Thus, this reference does not teach the claimed branching upstream of the first DPF. Also, no DPF is taught in the passage 24. Exhibit A is a marked-up version Minami that illustrates the arrangement of claim 1 as compared to Minami.

Tsuchiya shows, as seen in Fig. 2 thereof, that a trap filter 15 is arranged in the EGR passage 10 branched out at a downstream point of turbine 30a and joined to the exhaust passage at an upstream point of compressor 30b. However, as seen from Fig. 3 of this reference, the passage 18 is not an EGR passage but a passage through which air for backwashing the trap filter (DPF) 15 is fed under pressure. Thus, in Tsuchiya a DPF 15 provided in EGR passage 10, but this reference does not overcome the deficiencies in Minami.

The combination of Minami with Tsuchiya would result in the DPF 42 being provided in the first EGR passage 20 being branched out at a position upstream of turbine 81 and joined to the exhaust passage at a position downstream of the compressor 82. Alternatively, the DPF 43 would be provided in the EGR passage 24 branched out at a position downstream of a turbine and the first DPF 13, and joined to the exhaust passage at a position upstream of a compressor. However, neither of these possibilities would result in the second EGR passage being branched out at an upstream point of the first DPF, as claimed.

With respect to independent claim 5, this claim recites a second EGR passage for recirculating a part of the exhaust gas from the upstream side of said turbine to the upstream

side of said compressor. The Examiner relies upon Yasuma. However, the features relied upon by the Examiner as corresponding to the claimed second passage more closely relate to the claimed first passage.

New claim 9 recites an inlet and an outlet of the first EGR passage are disposed at a front side of the turbocharger and the inlet and an outlet of the second EGR passage are disposed at a rear side of the turbocharger. It is respectfully submitted that the cited references do not teach these features.

There are several advantages of the claimed arrangements as compared with the cited references.

When the second EGR passage is branched out on an upstream side of the first diesel particulate filter, the pressure of the exhaust gas is higher at the upstream side than at the downstream side of the first DPF. Thus, it is possible to take advantage of the higher exhaust-gas pressure in recirculating a portion of the exhaust gas through the second EGR passage.

Also, because a small DPF may be placed in the second EGR passage, it is possible to carry out control of EGR absolutely independent of the PM accumulation condition and the regeneration control of the first DPF.

Furthermore, warming-up of the engine can be easily carried out because the thermal capacity of the second DPF is less than that of the first DPF and the exhaust-gas cooling effect through the second DPF is less than that through the first DPF.

Still further, even when the first DPF has not been warmed sufficiently, it is possible to permit exhaust gas to flow into the second DPF at the point at which the exhaust gas is heated to a temperature at which PM trapping can take place.

Still further, it is possible to perform EGR in a broader range of the engine operation than in the case of Minami because it is possible to carry out EGR through the second EGR passage starting at the stage at which the exhaust-gas temperature is relatively low when compared with Minami.

It is possible to carry out EGR at any EGR amount or rate as desired according to the existing engine operation condition. This is highly advantageous particularly in the case of turbocharged engines.

Furthermore, with respect to claim 3, this claim recites said second EGR valve is controlled to be open when said detected exhaust gas temperature is higher than the regeneration temperature of said second diesel particulate filter. Thus, it is possible to prevent

DPF from undergoing clogging with PM and so forth, and the need can be cancelled to carry out regeneration control of the second DPF. Specification, paragraph [0019].

Also, the problem of exhaust gas being recirculated to the second DPF when the detected exhaust-gas temperature is low causing soot and clogging can be avoided.

This is advantageous as compared to Minami, wherein the exhaust gas undergoes a temperature lowering when it passes through the first DPF 13, so that it falls that low-temperature exhaust gas in the downstream side of the first DPF (13) is recirculated.

Regarding claim 5, this claim recites the second EGR passage recirculates from the downstream side of the turbine to the upstream side of the compressor. Thus, even when the pressure differential between the inlet and the outlet of the first EGR passage is lowered to the point that a portion of exhaust gas in the first EGR passage (i.e. EGR gas) can hardly undergo recirculation during a high-load engine operation, it is possible to recirculate the EGR gas to the intake side with use of the second EGR passage and through utilization of suction power of the compressor and carry out EGR at a high EGR efficiency. As a result of this, it is possible to efficiently reduce NOx. Specification, paragraph [0010]. In contrast in Minami, a pressure loss is generated when exhaust gas passes through the first DPF 13, so that a low-pressure exhaust gas on the downstream side of the first DPF 13 is recirculated, whereby it becomes difficult to let a portion of the exhaust gas be sufficiently recirculated through the second EGR passage 24 and EGR cannot be carried out at a high EGR efficiency.

Accordingly, withdrawal of the rejections is requested.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 11-15-05

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